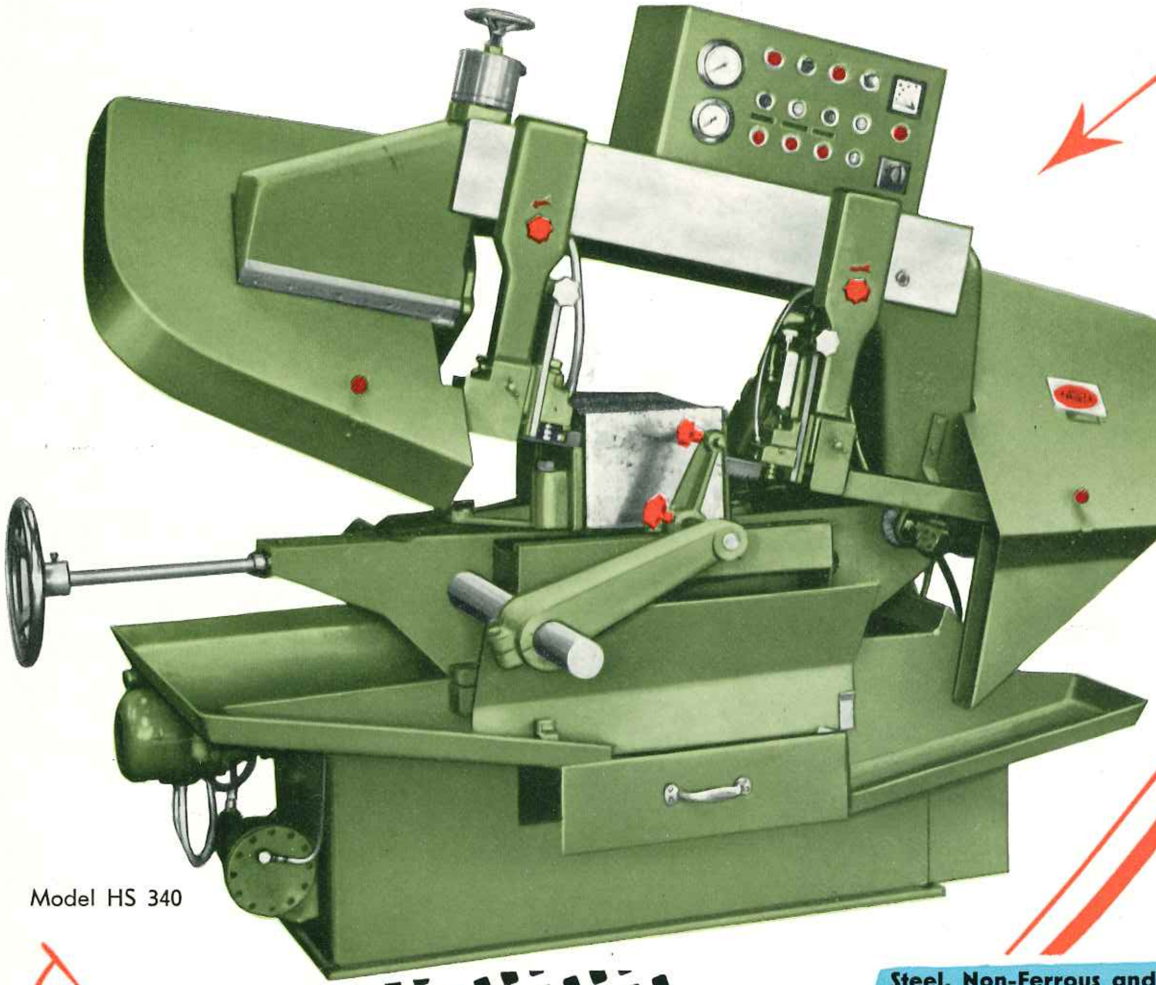
PEHAKA

HEAVY DUTY CUT-OFF BANDSAWS

9/14/66



Model HS 340

Steel, Non-Ferrous and Light Metals

Advantageous Price

Minimum Cutting Loss

Low Tool Costs

Tons of Material Saved per Year

CONTINENTAL MACHINE TOOL CO.
1231 WEST FIFTH STREET
LOS ANGELES, CALIFORNIA 90017

The **advantages** of cutting solid stock, tubes, profiles and the like on bandsawing machines is widely known to works' managers, production schedule men, foremen and engineers.

Most of the common saws not being efficient enough industry asked for better sawing machines to **increase speed** of cutting for **higher productivity.**

The **lowering of production costs** begins with reducing stock of any metal to size required.

The **new PEHAKA Production Cut-Off Saws** are the answer to this request for high performance and are being constructed to make full use of the several times increased cutting ability of **high speed steel saw bands.**

Employing HSS bands, cutting times will be **reduced** considerably (up to 5 times) and blade life **extended.** Using standard carbon bands on the new powerful PEHAKA saws, cutting rates are **doubled** still.

PEHAKA Production Cut-Off Bandsaws and HSS bands also render possible a relatively quick cutting of hard-to-machine steels and alloys with high accuracy, lowest stock waste and at lowest cost-per-cut. For HSS bands a **hydraulic blade tensioning** device is available (extra No. 204).

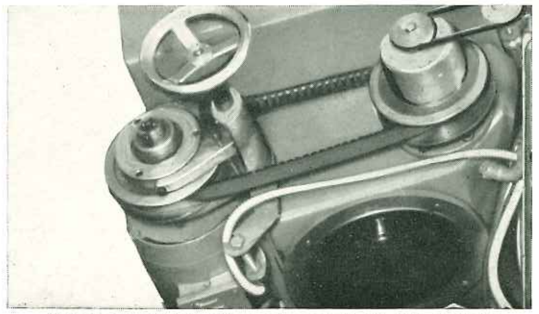
PEHAKA bandsaws sizes 340 and 400 are designed for the use of 32 mm (1¼") wide bands, models HS 340 and Roboter 340 S however, also may be operated with 25 mm (1") wide HSS bands for stock up to 200 mm (8") diameter to minimise tool costs (extra No. 700). For sawing with carbon steel bands 32 mm (1¼") blade width is recommended for all stock sizes.

PEHAKA Production Cut-Off Bandsaw Model HS 340

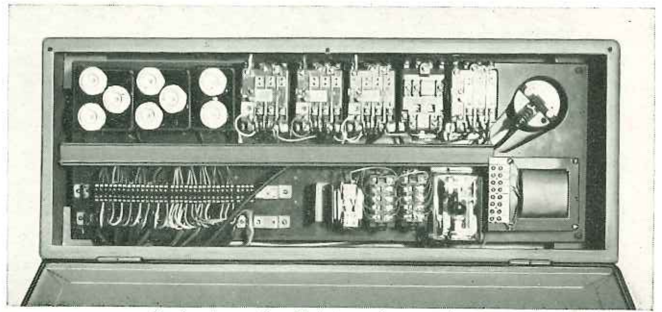
Capacity: up to **340 mm (13")** solids, profiles, tubes etc.
Construction: combined cast iron and steel construction
Clamping Vise: Swivel jaws, hand wheel operated, adjustable for 45° mitre cutting.
Saw Wheels: Robust disc type wheels with strong ball bearings.
Blade Guides: made for accurate cutting, blade preserving, feature ball bearing side rollers combined with adjustable wear-resistant chromium steel inserts, mounted to rugged guide posts, guarantee exact cuts of each and all duplicate pieces.
Tilting Saw Guides: There are screws fitted to each saw guide for minute variation in blade travel. Bands worn on one side of set only e. g. render oblique cuts, the band would have to be exchanged. With the help of the ingenious tilting guides blade travel can be corrected to get square and uniform cuts and also tool costs will be lowered through entire utilisation of the bands.
Electrical Equipment: Three 3-phase AC motors for saw drive, hydraulic and coolant pump, adjustable end-limit switches, entirely new control console incorporating push button switches, signal lamps, easy to read instruments (speedometer, amperemeter, **oil** pressure manometer). At the back, after removing the cover, access is given to the motor-protecting switches with overload and no-volt relays, isolation against recovery voltage, transformer for low-voltage controls, fuses and terminals.
Cutting Speed: stepless variable with hand wheel adjustment, speedometer and PEHAKA compass. Worm wheel gear mechanism with own oil circulating pump for safe and entire lubrication of gear wheels and oil temperature balancing.
Semi-Automatic Control: achieved through hydraulic **automatic lifting and lowering** of saw bow, **hydraulic positive** and adjustable down pressure and down feed, **hydraulic automatic regulation of cutting feed and pressure** for a smooth and elastic accommodation corresponding to varying material sections, hydraulic supporting cylinder, hydraulic pump, manometer to show hydraulic cutting pressure which can be set **sensitively and steplessly** as required for the varying stock sizes and machining ability of same. Through a **slow approach attachment** the feed rate of the saw bow can be reduced until the saw starts sawing and full feed is desirable.
Coolant System: Complete coolant cycle with washing down of saw chips to chip tray, tank, coolant flow at both guides.
Blade Brush: Is driven over flexible shaft, keeps saw teeth clean of chips, revolutions adjust themselves corresponding to blade velocity.
Protections: All moveable parts are totally enclosed for utmost safety, saw band covered up to cutting area.
Accessories: One saw band welded, one set of spanners.

PEHAKA Production Cut-Off Bandsaw Model HS 400

corresponds to model HS 340 in construction and equipment, the capacity however increases to **400 mm (16")** solids and tubes.



Stepless variable drive of models HS 340 and 400



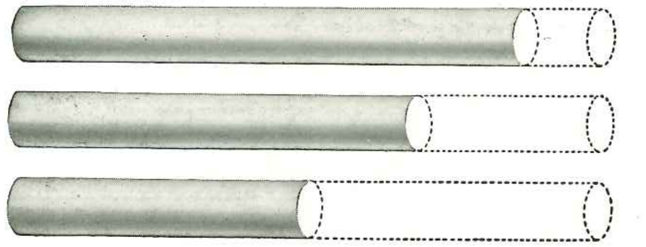
Back view of switch box (opened).
The electrical control is easily accessible

PEHAKA Cut-Off Bandsaws: *The economic way of stock reducing.*

Minimum Cutting Loss: approximately 7 kg (30 lbs) less stock is wasted sawing a solid bar of 400 mm (16") diameter on a PEHAKA bandsaw compared with a cold saw. Saving amounts to tons over a year in productive cutting work and can easily be estimated (see diagram!).

Low Tool Costs: The many thousand teeth of a saw band wear uniformly reducing tool costs, while a hack saw blade is working only with its middle part. A saw band of appr. 7,5 m (24'8") length is cheaper than 12 hack saw blades of 0,6 m (24") length; the difference in price is even greater compared with a circular saw blade.

Check Chip Waste after 100 cuts:



Only 140 mm (6") stock lost with PEHAKA Cut-Off Bandsaw

but

350 mm (14") costly material wasted with hack saw

600 mm (24") and more with cold saw and other parting methods.

Low Prime Costs: circular saws of the same capacity are several times higher in price and require more space. The favourable proportions between prime costs to cutting results and tool costs guarantee quick amortization of the PEHAKA Cut-Off Bandsaws.

Low power consumption: because of the very thin band, no strong motor is needed, thus money is saved also from this point of view.

Extra accessories:

No. 130 **Special Cutting Fluid Concentrate "Cimcool":** 1:30 dilutable, highly recommended, adding to life of saw band and preventing loading of saw teeth, rust formation, improves and facilitates chip producing (2 liters [3½ pints] for one tank filling).

No. 131 **Forced Air Cooling:** appr. 2,5 atü, recommended for sawing materials which do not need coolant such as gray cast iron, bronze, high alloy steels, cools saw band and keeps saw free from swarf and chips, complete with compressor, fittings and air jet.

No. 160-184 **Bandsaw Blades:** in different qualities and number of teeth, 25, 32 and 38 mm wide (1", 1¼", 1½") welded or in coils of each 30m (100"). Be sure to state kind and dimensions of stock to be sawn when ordering saw bands. DO NOT FORGET TO ORDER AN ADEQUATE QUANTITY OF SAY 5-10 SAWBANDS WITH EACH MACHINE!

No. 190 **Support for Material:** appr. 3 tons carrying capacity, needle bearings and fine adjustment, to be set up each 2 m (80").

No. 200 **Holding Fixtures for Bundles:** for simultaneous clamping of several bars or tubes, capacity appr. 200x200 mm (8"x8"). Can be used only after substituting automatic feeding device by No. 203 additional vise clamps in case of model Roboter.

No. 202 Clamping Device for short pieces up to 20 mm (¾") length, 80-330 mm ∅, (3¼-13"), semi-automatic on Roboter.

No. 203 One pair of additional vise clamps for semi-automatic operation of model Roboter.

No. 204 **Hydraulic Blade Tensioning Device,** holds cutting bands at exactly right tension for more accurate cutting and longer blade life, releases tension when machine is stopped and automatically retensions if started again, compensates initial expanding of new saw bands, **necessary for the full use of HSS saw bands.**

No. 210 **Electric Counter:** stops machine after having reached number of cuts preset. The counter eliminates counting errors and controls output.

Material Support Stand

Continued on page 6

Selection of right saw band essential

For sawing Steel and Non-Ferrous Metals:

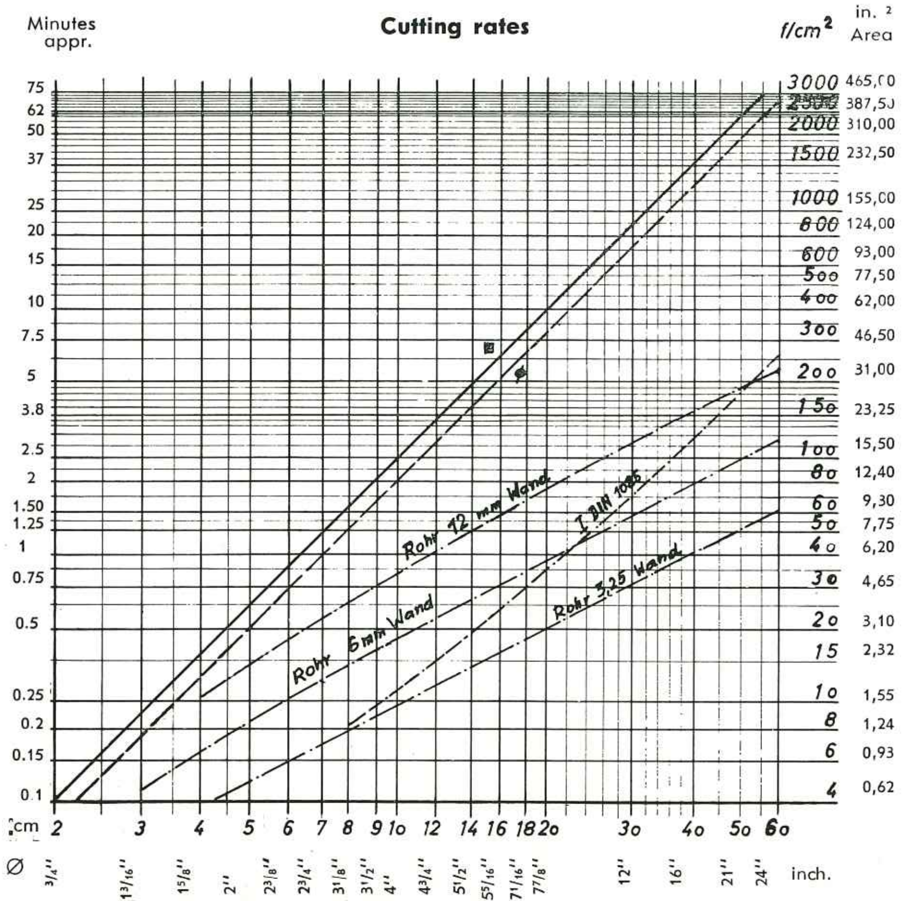
Tubes and profiles, more than 3 mm wall thickness	14 T.P.I.
Tubes and profiles, 3 mm wall thickness	10 „
Solid stock more than 50 mm (2") dia. . .	6 „
Solid stock more than 100 mm (4") dia. . .	3— 4 „

For sawing Light Metals:

up to 25 mm (1") wall thickness	8—10 T.P.I.
up to 100 mm (4") stock thickness	6 „
more than 100 mm stock thickness	4 „

Use a blade which allows 3, at least 2 teeth to be in contact with the work at all times.

When cutting hard materials select next higher number of teeth.

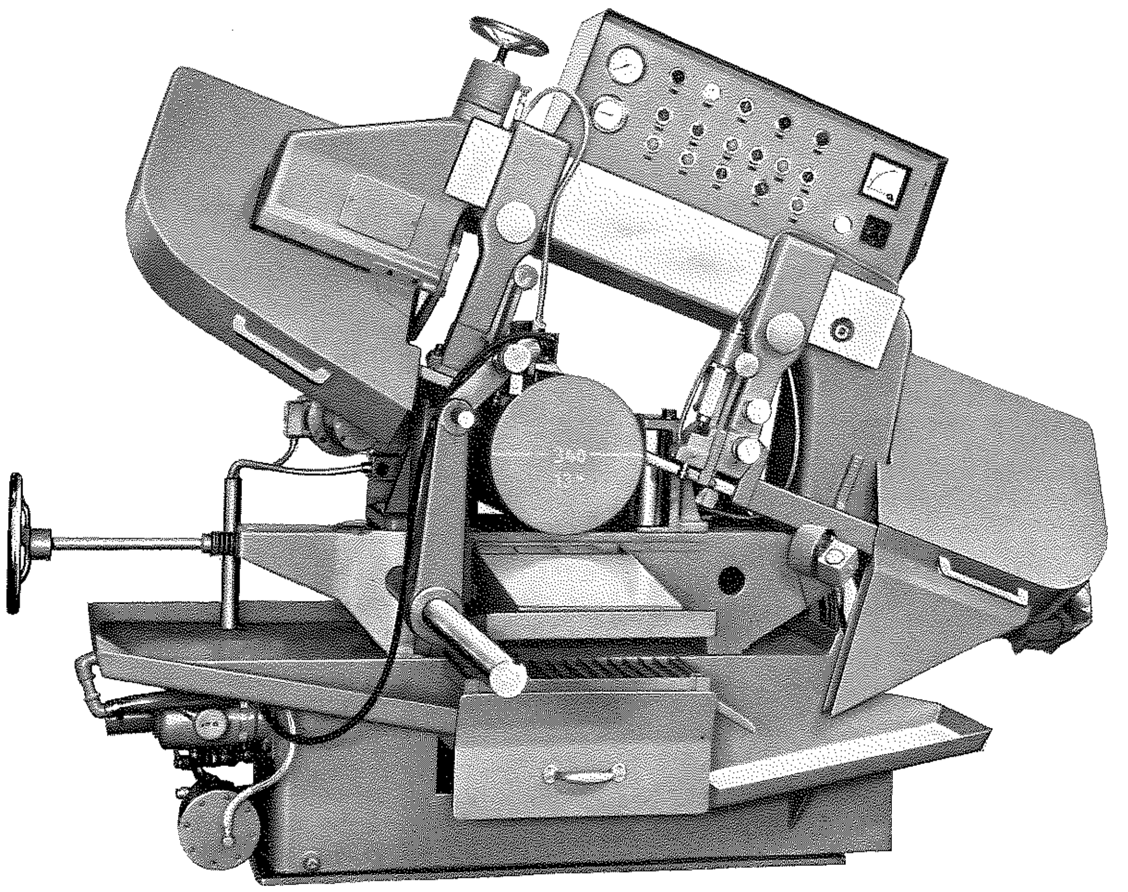


Life of Saw band sawing solid stock appr. 1 to 2 m² (11 to 22 sq. ft)
Life of Saw band sawing tubes, profiles appr. 1,5 to 2.5 m² (16 to 27 sq. ft)

For steel ST 37-50 (23 to 32 tons/square inch) with new saw band of standard carbon quality.
Double time for sawing e. g. ST 70 (45 tons/square inch) or EC 80 (EN 201)
Triple cutting time for sawing e. g. high speed steel, stainless steels and the like.
HSS bands double cutting rates with blade life extended.

Cutting times and life of saw band are influenced by quality of saw band, teeth condition, right saw pitch and cutting speed, coolant and kind of stock to be sawn.

(Rohr 12 mm Wand = Tube ½" wall)



PEHAKA Fully Automatic Production Cut-Off Bandsaw Model Roboter 340 S

Here is a rugged machine with **complete automatic** cycle for cutting off most economically bar stock, tubes, structurals etc. up to appr. 340 mm (13") diameter.
The operator simply loads the machine by feeding the stock into **draw-in rollers.** Length of section to be cut is preset by adjusting a limit stop switch with electric relay which starts lowering of saw frame. At completion of cut a hydraulic cylinder lifts saw frame to any preset height, material is fed to limit stop with fine adjustment ($^{1}/_{10}$ mm - 0.004") for next cutting cycle. No time is lost, for opening of vice and reclamping stock, **PEHAKA offers the quickest method of stock feeding.**

A hydraulic feed regulating attachment automatically regulates cutting feed and pressure corresponding to varying material sections.

Controls are grouped on panel in convenient reach for operator. Coloured signal lamps indicate proper functioning of the various units.

Limit Stop for any length up to 24" (Extended stops optional).

Cutting remainders of approx. 170 mm (7") length are thrown out backwards to avoid possible jamming of saw blade. The machine vise is adjusted by means of hand wheel and spindle. The basic design of model Robot 340 S is equal to model HS 340 semi-automatic.

There are no idle times:

No manual lifting of saw frame

No manual adjustment of saw frame

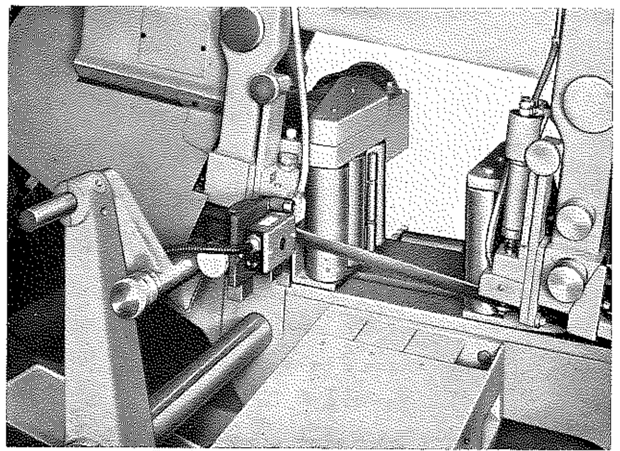
No manual stock feed

No switching-on and-off after each cut

No control of sawing process necessary

The **time- and money saving** PEHAKA Roboter pays off within a short time, even when only cutting small sections, due to the very small quantity of swarf removed per cut, other methods remove large chips; whereas thus saving tons of material over a year,

Operating is simple and can be mastered with a little training, production rates go up and costs fall using the PEHAKA Roboter.


Feeding rollers and material stop.

No matter how many duplicate pieces are required, the operator only has to set stop at required length, feed material into draw-in rollers, clamp, adjust correct speed and start machine by pressing push buttons. The daily saving of manhours can easily be estimated. Employing an electric counter (optional) the machine is even more free from man's attention, the Roboter does its work at meal times and after works have closed!

PEHAKA Fully Automatic Production Cut-Off Bandsaw Model Roboter 400 S

corresponds to model Roboter 340 S, however with cutting capacity up to **400 mm (16").**

Roboting your stock ensures highest possible economy and more day's work with a minimum of cost for tools, power, chip waste, labour!

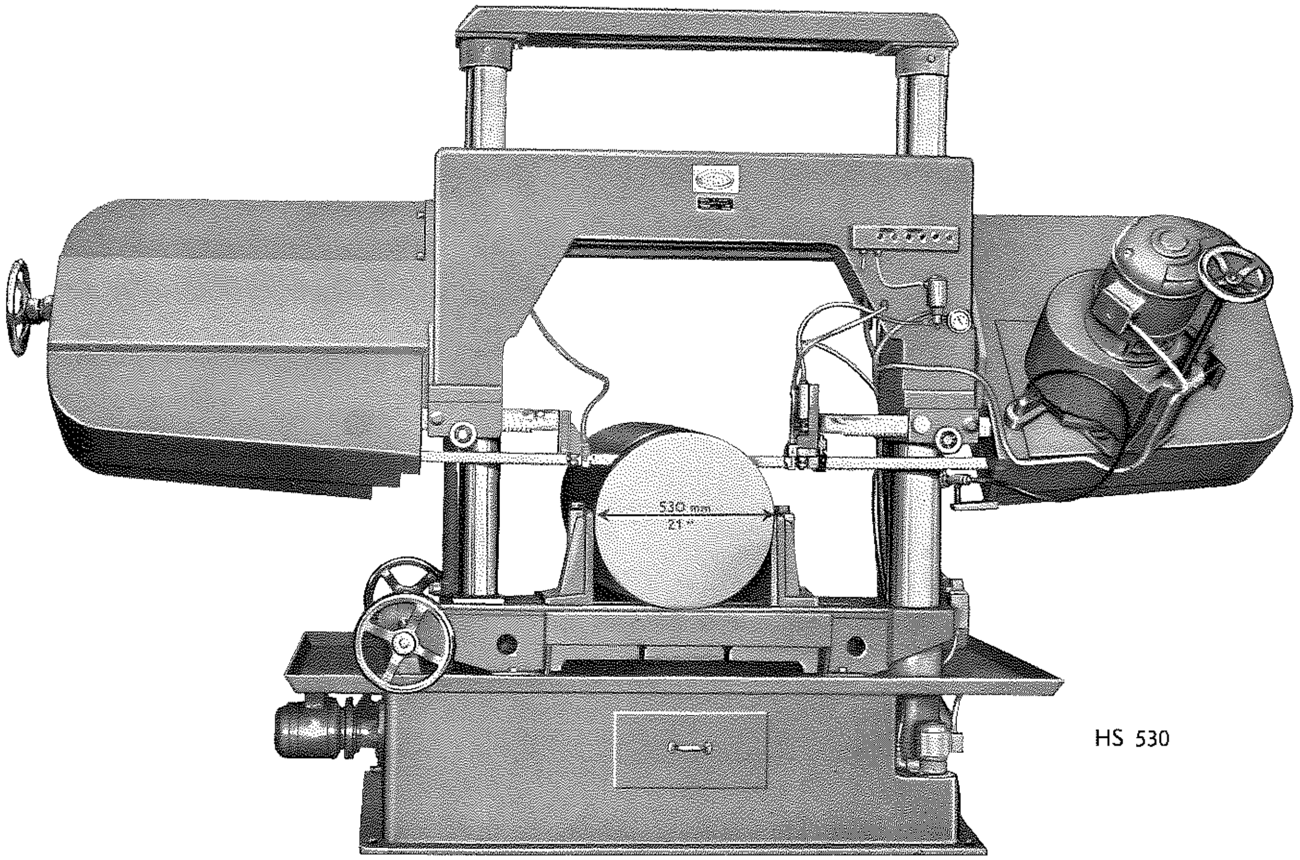
PEHAKA Heavy Duty Cut-Off Bandsaws, Models HS, HSL 530

of approved two-column construction for sawing solids, tubes, profiles etc. up to 530 mm ∅ (21"). For cutting tubes and profiles the cutting capacity can be increased to 600 mm (24") at extra charge.

Model HS 530 is for sawing steel, cast iron, hard alloys, on model HSL 530 additionally light metals can be cut.

There is **no idle return stroke** or interruption of cutting process, the saw band is working continuously.

Extra wide saw bands of 38 mm (1 $^{1}/_{2}$") width and high constant saw tension guarantee accurate cutting of each piece, also when cutting big diameter stock or high alloyed steels.



HS 530

Saw Frame: of strong steel construction, guided in two rugged columns.

Hydraulic Lifting and Lowering of Saw Frame: the hydraulic pump with oil tank is located in the machine base. Frame lifting is started by pressing a push button. At down feed a **hydraulic regulating valve** automatically controls cutting feed and pressure conforming to stock thickness, no matter what kind and shape of material is being sawn. Overloading of saw band is not possible, cutting times are reduced and saw life extended. The down feed velocity is adjustable, a locking valve serves for stopping frame in any desired position. A manometer shows oil pressure of hydraulic pump.

Vice: has swivel jaws, is mounted on the machine bed and is adjustable to 45° mitre cuts with scale. Clamping is done by handwheel in both front or rear of machine. For better clamping of stock at angles a special clamping attachment is available against extra charge.

Saw Wheels: heavy duty disc type saw wheels are fitted with ball bearings. The idler wheel is adjustable for tracking and tensioning the saw band, thus the saw band being fully protected up to working aera.
Saw Tension Indicator: allows accurate setting of saw tension.

Drive: by 3 phase AC motor through **stepless variable** gear. Cutting speed is adjusted by handwheel while machine is running.

Saw Band Guides: precision type, with ball bearing side and thrust rollers together with adjustable chromium steel guide inserts. This insures accurate cutting of each and all duplicate pieces. The guides can easily and quickly be set to stock thickness by handwheel, securing through a knurled knob.

Magnetic Valve: controls electric supply and automatically stops saw feed in case of failure of tension or other troubles.

Band Cleaning Brush: driven by flexible shaft, cleans blade of saw chips and prevents loading of teeth, additional wipers are mounted to one saw guide.

Coolant System: self-priming electric pump, perforated chip tray, fluid tank and tubing to cutting point.
Limit Switch: breaks circuit automatically at end of cut.

Control Panel: with push buttons, coloured signal lamps and operating plates, in easy reach of operator.

Technical Data

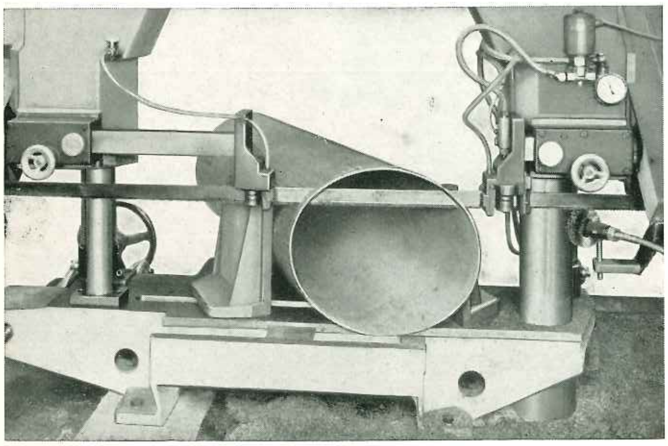
Models	Capacity approx mm		round	Angle cutting up to 30°		45°		Size of sawband	Cutting speed	Main Motor	Floor space	Weights kg		Shipping box	Cubage
	flat	square	solid / tubes	profiles *	mmØ	profiles *	mmØ	mm	m/min	HP	mm	net	gross boxed	mm	cbm
HS 340	500x300 *(20x12")*	340x340 *13½x 13½"*	340 *(13½")*	INP 34 *(BSB 125)*	330 *(13")*	INP 34 *(13½x5")*	260 *(10")*	4860x1x32 (25) *(191⅜x .039 1¼" (1")*	12-80 *(40-260 FPM)*	3	2600x1000 *(103x40")*	880 *(1950 lbs)*	1080 *(2400 lbs)*	1020x2550 x1650	4,3 *(152 cbf)*
HS 400	500x300 *(20x12")*	380x380 *15x15"*	400 *(16")*	INP 40 *(BSB 132)*	380 *(15")*	INP 40 *(16x6")*	300 *(12")*	5300x1x32 *(208⅝x.039 x1¼")*			2900x1000 *(144x40")*	1100 *(2420 lbs)*	1300 *(2850 lbs)*	1020x2850 x1850	5.4 *(191 cbf)*
Roboter 340 S	400x290 *(16x11½")*		340 *(13½")*	On request				see under HS 340			2600x1400 *(103x56")*	1050 *(2300 lbs)*	1280 *(2800 lbs)*	1450x2250 x1650	6.1 *(215 cbf)*
Roboter 400 S	400x300 *(16x12")*		400 *(16")*					see under HS 400			2900x1400 *(114x56")*	1200 *(2650 lbs)*	1450 *(3200 lbs)*	1450x2850 x1850	7.65 *(199 cbf)*
HS 530 HSL 530	530x400 *(21x16")*	450x450 *(18x18")*	530 **) *(21")*	INP 50 *(BSB 138)*	400 *(16")*	INP 40 *(BSB 132)*	320 *12¾")*	7400x38x1,3 *(291x1½ .051")*	10-60 *33-195 FPM)* 10-350 *33-1150 FPM)*	4 5,5	3500x1400 *(138x55")*	2300 *4060 (lbs)*	2600 *(5720lbs)*	3800x2200 x1760	14.7 *(520 cbf)*

*) edgewise (All data are approx.) **) 600 mm (24") extra charge.

Further accessories.

No. 211 **Piece Counter,** indicates number of pieces cut.
No. 494 **Electric Bandsaw Butt Welder,** size 3, for welding metal cutting bandsaw blades 5-32 mm wide (¼"-1 ¼") with reinforced coil, for two phase AC current, with mounted blade shear and annealing device.
No. 495 Electric Bandsaw Butt Welder, size 3, as described above, however, for welding metal cutting bandsaw blades up to 38 mm (1 ½") width.
No. 500 **Electric Grinder:** for removing welding burr, driven by 125 Watts electric motor, incl. switch and grinder guard.
No. 510 **Saw Thickness Gauge:** to check proper thickness of saw after welding.

No. 700 Additional parts for alteration of model HS 340 or Roboter 340 S to **utilize also 25 mm (1")** wide saw bands. Saw wheels and blade guide inserts must be exchanged, which can be done within a short time.
No. 1000 **Automatic Saw Sharpener** model PHO for resharpening bandsaw blades of 6-35 m/m (¼"-1⅜") width, electric motor, mounted on stand.
No. 1001 Model PHO, same as No. 1000, however for sharpening bandsaw blades 6-60 mm (¼-2⅜") width.



Mitre Cut on Model HS 530
No deformation of tube.

Cutting in Series

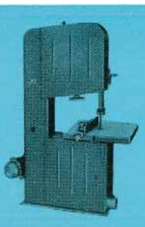
(Specifications, measurements and design are subject to change without incurring obligations. !)

Further PEHAKA Metal Cutting Bandsaws

PEHAKA Cut-Off Bandsaws up to 260 mm (10") diameter fully automatic up to 200 mm (8").
PEHAKA Contour Bandsawing, Filing, Grinding and Polishing Machines
PEHAKA Universal Production Bandsaws
PEHAKA Light Metal Cutting Bandsaws
PEHAKA Friction Cutting Bandsaws

USF 9-R

USF 4-R



SD 6.3

Band Mill

HS 260

PETZING & HARTMANN, KASSEL-B.

Maschinenfabrik